



Should Tanning Salons Be Banned?

Citation

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Should Tanning Salons Be Banned?

ID# 903-5124-90

Food and Drug Law

Winter Term 1995

January 27, 1995

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Tanning salons are a one billion dollar business each year in the United States.¹ Over one million people a day visit the 21,000 tanning establishments in this country in search of the perfect tan,² paying four to twelve dollars per session.³ The salons are particularly popular with women and the young; one study showed that 33% of girls and 16% of boys over fifteen years old have visited a salon.⁴ One million Americans are tanning Junkies, visiting tanning salons at least one hundred times per year.⁵ Despite their popularity, these salons have been widely criticized by the medical profession. In 1992, the American Academy of Dermatologists expressed concern that the medical community was losing ground to a culture that believed the salons were safe.⁶ The Academy offered two solutions to the problem: banning the salons altogether, or regulating them more strictly.⁷ The House of Delegates of the American Medical Association issued a similar recommendation just last month.⁸ This paper critiques the proposed solutions of the American Academy of Dermatologists and the American Medical Association. Part I explains how tanning salons are presently regulated by the Food and Drug Administration

¹ *Tanning Salons & Risk*, 22 *Cosmetic Insiders'* Rep. 13 (1994).

² Philippe Chemaly Jr., *Panel Wants Less Exposure to Ultraviolet Radiation*, 81 J.

Nat'l. Cancer Inst. 897 (1989). See also Robert S. Stem, *Members of the Photochemotherapy Follow-up Study*, 322 *New Eng. J. Med.* 1093, 1096 (1990).

³ *UV-A Rays for Tanning Seen Unsafe*, *Newsday* (Nassau and Suffolk Ed.), Feb. 7, 1994, at 54.

⁴ Beverly A. Banks et. al., *Attitudes of Teenagers Toward Sun Exposure and Sunscreen Use*, 89 *Pediatrics* 40 (1992).

⁵ Larry Schuster, *Skin Cancer Rate Continues Upward*, *United Press Int'l*, May 2, 1994.

⁶ *Tanning Salons & Risk*, *supra* note 1. See also Robert Scott, *Dermatologists Warn Nation of Increased Skin Cancer Risk*, 84 J. Nat'l. Cancer Inst. 1696 (1992).

⁷ *Id.*

⁸ Lisa M. Krieger, *AMA urges strict watch on salons; Cites skin cancer epidemic as indoor tan season opens; Tanning Parlors Feel the Heat*, *The San Francisco Examiner*, January 2, 1995, at A-i.

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and state laws. Part II analyzes the arguments for and against a ban of these salons, and concludes that such a ban would be inappropriate. Part III uses the arguments articulated in Part II to suggest specific changes to the federal regulation of tanning salons to make such regulation more effective.

I. The Present Regulatory Scheme

Tanning devices are regulated by the Food and Drug Administration in two ways:

as medical devices, and as electronic products that emit radiation. Tanning lamps are included in the Federal Food, Drug, and Cosmetic Act's definition of device, as an instrument intended to affect the structure or any function of the body of man or other animals.⁹ As articulated by the FDA, such regulation is appropriate because the various therapeutic uses for sunlamp products, including treatment of fungal diseases, vitamin D production, treatment of psoriasis, and treatment of acne, cannot be readily separated from the tanning function insofar as assurance of intended use and danger from overexposure are concerned.¹⁰ However, sunlamps have not yet been placed into one of the three classes of medical devices. According to the FDA, the performance standard regulating the lamps as electronic radiation products, as explained below, sufficiently addresses all safety problems with the lamps, except electric safety problems.¹¹ As a result, pending a study addressing the electric safety of these lamps, the FDA predicted that they would be classified Class

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While tanning devices are therefore subject to FDA's general controls as medical devices, they are also regulated more specifically as electronic products that emit radiation. Such devices are regulated under the Radiation Control for Health and Safety Act, 42 U.S.C. 263b *et seq.* The responsibility for enforcing this Act was transferred from the

⁹21 U.S.C. 321 (h)(3)(1992).

¹⁰44 Fed. Reg. 65353 (1979).

¹¹53 Fed. Reg. 23856 (1988).

Environmental Protection Agency to the FDA in 1971,¹³ and merged with the Bureau of Medical Devices in 1982.¹⁴ Under this Act, the FDA is given several powers with respect to such devices, including notification of defects by manufacturers,¹⁵ inspection privileges,¹⁶ and ability to require record-keeping by certain parties.¹⁷ The agency is also authorized to adopt performance standards for such devices if they are necessary to protect the public health and safety.¹⁸ The FDA has adopted such a standard for tanning devices.¹⁹ These standards apply to any sunlamp product or ultraviolet lamp intended for use in any sunlamp product, as long as it is used for skin tanning. Lamps used by doctors for therapeutic uses are exempt.²¹ In order to comply with the standard, lamps must meet several criteria:

1. Irradiance ratio - The ratio of light with wavelengths in the 200 to 260 nanometer (nm) range to that in the 260 to 320 nm range may not exceed .003 at any distance from the lamp, in any direction.²² In other words, light with a wavelength of over 260 nm must constitute at least 99.7% of the light emitted by the product. The FDA has presumably instituted this restriction because shorter wavelength light has traditionally been perceived as more dangerous.²³

2. Timers - All tanning devices must have timers.²⁴ These timers must be equipped with multiple time settings, corresponding to the manufacturer's maximum

¹³ 36 Fed. Reg. 12803 (1971).

1447 Fed. Reg. 44614 (1982).

¹⁵ 21 U.S.C. 36011 (Supp. V 1993).

1621 U.S.C. 360nn(a) (Supp. V. 1993).

¹⁷ 21 U.S.C. 360nn(b) (Supp. V 1993).

1821 U.S.C. 360kk (Supp. V 1993).

¹⁹ See 21 C.F.R. 1040.20 (1994).

2021 C.F.R. 1040.20(a)(1), (b)(9) (1994).

2150 Fed. Reg. 36548 (1985).

2221 C.F.R. 1040.20(c)(1) (1994).

²³ See below.

2421 C.F.R. 1040.20(c)(2)(i)(1994).

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recommended exposure time for people with different skin types.²⁵ The longest time for which the timer can be set may not exceed the longest exposure time recommended by the manufacturer.²⁶ The timer cannot be subject to error greater than ten percent of its maximum exposure time.²⁷ While the timer cannot automatically reset itself,²⁸ it need not prevent resetting by the user.²⁹

3. Safety switch - The device must have a feature that allows customers to turn it off during exposure.³⁰ This feature must be readily accessible to the user, and must provide an opportunity other than just pulling out the plug.³¹

4. **Protective eyewear** - The lamp must be equipped with sufficient sets of goggles to accommodate the maximum number of simultaneous users recommended by the manufacturer.³² While the eyewear must filter out a specified amount of ultraviolet radiation, it may not block so much visible light that the consumer cannot see comfortably.³³

5. Compatibility of lamps - Lamps may not be capable of installation into certain lamp bases,³⁴ in an effort to ensure that sunlamps are used only in devices that provide adequate warning labels and timers.³⁵

6. Labels - Sunlamp products must be equipped with the following label:

DANGER - Ultraviolet radiation. Follow instructions. Avoid overexposure. As with natural sunlight, overexposure can cause eye and skin injury and allergic reactions. Repeated exposure may cause

²⁵ 1d

²⁶ 1d

(c)(2)(ii).

²⁷ 1d

(c)(2)(iii).

²⁸ 1d

(c)(2)(iv).

²⁹ 1d

(c)(2)(v).

³⁰ 1d

(c)(3).

³¹ 1d

³² 1d

(c)(4)(i).

³³ 1d.

(c)(4)(ii).

³⁴ 1d.

(c)(5).

~~42 Fed. Reg. 65191(1977).

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premature aging of the skin and skin cancer. WEAR

**PROTECTIVE EYE WEAR; FAILURE TO MAY RESULT
IN SEVERE BURNS OR LONG-TERM INJURY TO THE**

EYES. Medications or cosmetics may increase your sensitivity to the ultraviolet radiation. Consult physician before using sunlamp if you are using medications or have a history of skin problems or believe yourself especially sensitive to sunlight. If you do not tan in the sun, you are unlikely to tan from the use of this product.³⁶

The signal DANGER rather than CAUTION is used, because the FDA believes these lamps can be an immediate threat to life for certain users, including those with photosensitive allergies or those taking photosensitive medications.³⁷

The device must also be labelled with recommended exposure positions, shown either by distance or by markings on the device.³⁸ The label must also give directions for achieving these positions, and a warning that other positions can cause overexposure.³⁹ Finally, the label must give the recommended exposure time for the lamp, and the customary time required to achieve tanning results.⁴⁰ Other statements can also be included on the label if they are not false or misleading in any particular.⁴¹ These statements may not diminish the impact of the label.⁴² The label must be permanently affixed to the exterior of the device so as to be legible and readily accessible to the user immediately before exposure.⁴³ Manufacturers who have difficulty complying with these regulations can petition for an exemption!⁴⁴

7. User instructions - Adequate instructions for use of the device to avoid or minimize potential injury to the user must be provided by the manufacturer to all

3621 C.F.R. 1040.20 (d)(1)(i) (1994). The labelling requirements for ultraviolet

products other than sunlamps are somewhat different. See *id.* (d)(2).

~50 Fed. Reg. 36549 (1985).

3821 C.F.R. 1040.20 (d)(I)(ii) (1994).

⁴⁰ *Id.* (d)(1)(iv)-(v).

⁴¹ *Id.* (d)(3)(v).

⁴³ *Id.* (d)(3)(i).

⁴⁴ *Id.* (d)(3)(iii).

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purchasers, and to all others, upon request, at a cost no greater than that of publication and distribution.⁴⁵ In the case of sunlamps, these instructions must contain: a copy of the required label, a statement of the maximum number of people who can use the product at one time, instructions for use of the product, a schedule of recommended exposures by skin type, and instructions for repair and replacement of the product.⁴⁶

These current guidelines for sunlamp products are quite similar to those originally promulgated by the Food and Drug Administration in 1979.⁴⁷ Two changes to the law in 1985 are noteworthy, however.⁴⁸ First, the FDA now regulates the longer wavelengths of ultraviolet radiation that were once considered safe. For example, prior to 1985, the FDA regulated wavelengths in the 180 to 320 nm range, requiring that the ratio of light in the 180 to 260 nm range to that in the 260 to 320 nm range could not exceed .5.⁴⁹ Since

1985, however, the FDA has regulated the light with wavelengths from 200 to 320 nm, requiring that the ratio of light in the 200 to 260 nm range to that in the 260 to 320 nm range not exceed .0035.⁵⁰ This change was prompted by new scientific evidence that showed that radiation in the lower end of this range caused cancer.⁵¹ As a result, most sunlamps today emit almost exclusively in the UVA range (320-400 nm).

The second change made to the sunlamp performance standard in 1985 was to eliminate the maximum exposure time of ten minutes.⁵² Under the present scheme, manufacturers set the exposure time for their products. This change was a result of both the switch to longer wavelength, safer UVA radiation, and the realization that the appropriate

⁴⁵ 1d. (e).

⁴⁶ 1d.

⁴⁷ 4744 Fed. Reg. 65352 (1979), *proposed in* 42 Fed. Reg. 65189 (1977).

⁴⁸ *See* 50 Fed. Reg. 36548 (1985).

⁴⁹ 4944 Fed. Reg. 65357 (1979).

⁵⁰ *See supra* note 22.

⁵¹ 47 Fed. Reg. 22887 (1983).

⁵² 48 Fed. Reg. 22888 (1983).

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maximum exposure time depends on the particular product, the age of the product, and the particular user.

The Food and Drug Administration has enforced the provisions of these regulations in several ways. For example, the agency has brought court actions against several violators. In one case, it obtained an injunction and \$10,000 in damages from an operator who had failed to post adequate warnings on forty-seven tanning booths, had refused to remedy the situation despite repeated warnings, and had resisted FDA inspections.⁵³ The agency also obtained \$8500 and an injunction from another party who was importing and distributing ultraviolet bulbs and beds not in compliance with the performance standards.⁵⁴ In a third case, the FDA filed misbranding charges against a tanning bed manufacturer, whose product lacked the required labels and instructions for use.⁵⁵

While the FDA has rarely filed formal charges against tanning bed manufacturers and tanning salons, their efforts have resulted in a series of manufacturer recalls. Manufacturers have cited several different reasons for these recalls, including timers capable of running for longer than the maximum exposure time,⁵⁶ recommended time intervals that were not in accordance with the exposure schedule,⁵⁷ inadequate warning labels and user instructions,⁵⁸ recommended exposure times calculated after inadequate testing,⁵⁹ incorrect lamp replacement labels,⁶⁰ and inadequate record keeping.⁶¹ Through

⁵³ *Throneberry v. FDA*, 1983-1984 FDLI Jud. Rec. 242 (E.D.Tenn. 1983), 1983-1984

FDLI Jud. Rec. 382 (E.D.Tenn. 1984).

⁵⁴ Gray Sheet 13(6), Feb. 9, 1987. at I&W -5-I&W-7.

⁵⁵ Gray Sheet 16(48), Nov. 26, 1990, at 9-11.

⁵⁶ Gray Sheet 20(35), Aug. 24, 1994, at 13; Gray Sheet 12(28), July 14, 1986, at 12-

15.

⁵⁷ Gray Sheet 20(35), Aug. 24, 1994, at 13.

⁵⁸ Gray Sheet 18(33), Aug. 17, 1992, at 21-26; Gray Sheet 18(25), June 22, 1992, at

I&W-9-I&W-11; Gray Sheet 18(10), Mar. 9, 1992, at 7-9.

⁵⁹ Gray Sheet 15(47), Nov. 20, 1989, at I&W-7-I&W-8.

⁶⁰ Gray Sheet 15(43), Apr. 6, 1987, at I&W-7-I&W-9.

⁶¹ Dixie Farley, *Court Decision Strengthens FDA's Regulatory Power*, 27 FDA

Consumer No. 7, Sept.. 1993, at 40.

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the mechanism of manufacturer recalls, therefore, the FDA has enforced compliance with the performance standard for sunlamps.

Tanning salons are often subject to even stricter regulation by the states. While Ohio was the only state to regulate indoor tanning as of May, 1988,⁶² nineteen other states have since adopted such legislation.⁶³ As an example, the Massachusetts law is representative of those adopted by other states. Under this statute, all tanning salons must be licensed, and are inspected within 30 days of licensure and every six months thereafter.⁶⁴ Customers must sign a written warning of the dangers of indoor tanning each time they use the salon.⁶⁵ This warning must also be posted in a conspicuous place, cover an area of at least eight and one-half inches wide and eleven inches long, and be printed in white writing on a red background.⁶⁶ The warning must state that users should follow instructions on the tanning device, avoid too frequent or lengthy exposure, wear protective eyewear, avoid sunbathing before or after exposure, and avoid tanning if they are taking photosensitive drugs.⁶⁷ The warning must also emphasize that those who do not tan in the sun are unlikely to tan in a tanning salon, and that such tanning does not provide a protective base against the sun's ultraviolet radiation.⁶⁸ The salon must also be staffed with an informed operator, who is responsible for limiting exposure time to the recommended amount and for maintaining the temperature in the unit at below one hundred degrees Fahrenheit.⁶⁹ All users must wear protective eyewear.⁷⁰ Parents or guardians must sign the warning for all users between fourteen and seventeen years old, and those under fourteen must be

⁶²David Brand, *Perils of the Tanning Parlor*, Time, May 23, 1988. at 76.

⁶³California, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Massachusetts, Minnesota. New Jersey, New York, Oregon, Tennessee, Texas, Virginia, and Wisconsin.

⁶⁴Mass. Gen. L. ch.111 s. 208 (1994).

⁶⁵1d s.209.

⁶⁶1d

⁶⁷1d

⁶⁸1d

⁶⁹1d s.210.

⁷⁰1d.

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accompanied by such parent or guardian.⁷¹ Salons are specifically prohibited from claiming that indoor tanning is safe and free from risk.⁷² All reports of injury and complaints must be reported to the Board of Health, who has the right to inspect the premises.⁷³ Fines for any violation of these provisions range from two hundred to two thousand dollars.⁷⁴

Despite the efforts of the FDA and the state agencies, many tanning salons are not complying with the performance standards. For example, one group of scientists conducted a study in Arkansas, masquerading as tanning salon customers to determine how well salons complied with FDA regulations.⁷⁵ They found that most salons were complying with the restrictions on UVB radiation levels.⁷⁶ However, they realized that the level of UVB emitted by the same bulb varied a great deal from visit to visit, depending on how recently the bulb had been replaced.⁷⁷ They found that the safety on/off switch was regularly present, but was often hard to see with the lamps on.⁷⁸ None of the salons required goggles, and two out of thirty salons did not provide them, although one did when the scientists specifically requested them.⁷⁹ Warning signs were only posted at six out of fifteen salons.⁸⁰ A timer with a maximum setting, which is provided by the manufacturer, was always present, although there was a general practice of resetting the timer to double the recommended thirty minute session.⁸¹ Some salons provided a list of photosensitive drugs to customers, and some required them to sign a release, stating that they had not been

⁷¹ 1d. s.211.

⁷² 1d s.212.

⁷³ 1d. s.213.

⁷⁴ 1d. s.2 14.

⁷⁵ Francine Bruyneel-Rapp et. al., *The Tanning salon: An area survey of equipment, procedures, and practices*, 18 J. Am. Acad. Derm. 1030-1038 (1988).

⁷⁶ 1d at 1033.

⁷⁷ 1d. at 1032.

⁷⁸ 1d at 1033.

⁸¹ 1d

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advised by a physician to avoid the sun. Copies of this release were never provided to the customer, even upon request.⁸²

Other studies have shown similarly spotty compliance with the statute. A paper in the *New England Journal of Medicine* stated that warning signs were rarely posted in these salons,⁸³ a proposition supported by one study that showed that 53% of forty-one New York salons surveyed did not post the required warning signs.⁸⁴ Even when these signs are posted, consumers do not always obey them: one survey of tanning salon users revealed that 78% always used goggles, 14% sometimes did, and 8% never did, worried about the panda effect of white circles around their eyes.⁸⁵ Finally, another study indicated that many salons do not provide eyewear, impose inadequate limits on exposure, and make inaccurate claims about UVA tans, informing customers that they protect against burns.⁸⁶ Therefore, while the FDA and many states have adopted specific standards regulating tanning salons, these guidelines are not regularly followed.

II. Should Tanning Salons Be Banned?

The American Medical Association and the American Academy of Dermatology have both concluded that the present regulatory system is inadequate.⁸⁷ Even if it were more stringently enforced, it would not sufficiently address the problems with indoor tanning. As a result, these groups suggest a ban on the practice of indoor tanning, and if

⁸² *Id*

⁸³ Diana Preston and Robert Stem, *Medical Progress: Nonmelenoma Cancers of the Skin (Review Article)*, 327 *New Eng. J. Med.* 1655 (1992).

⁸⁴ *Tanning salons cited for not displaying warnings*, United Press Int'l, Feb. 21, 1993.

⁸⁵ B.L. Diffey. *Use of UV-A sunbeds for cosmetic tanning*, 115 *Brit. J. Derm.* 70 (1986).

⁸⁶ Nancy Kubasek and Andrea Giampetro-Meyer, *Consumers Burned Again: The Potential Legal Liability of Tanning Bed Manufacturers and Tanning Salon Operators*, 12 *J. Prod. Liab.* 1, 16 (1989).

⁸⁷ *See supra* notes 6-8.

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that solution is not possible, stricter regulation. Considering all the factors involved, a ban on tanning devices is not the best solution to the problem.

A. Arguments Against the **Ban**

Free Choice

Imposing a ban on tanning salons would restrict the free choice of consumers. If consumers are given adequate information about the dangers of indoor tanning, then they should be able to weigh these risks against their own personal benefits from indoor tanning and decide for themselves if such tanning would be a rational choice. The government should not tell consumers that they cannot assume certain risks, even if they are willing to do so, just because the government believes that the risks are too great. Not everyone develops cancer after visiting these salons, and consumers might be willing to take the gamble. A ban on tanning salons would infringe the free choice rights of over one million citizens of the United States.

A ban would also infringe upon the autonomy of the salon owners and lamp manufacturers, who have made tanning their chosen career. By banning these devices, the government would be infringing upon their choice. These people have decided that they are willing to assume the risks of being involved in this industry, because the benefits are worth it. The government should not be able to deny this choice.

There are two limitations on this argument in the tanning salon context, however. First, it is unclear whether the users of the salons are really making an informed choice. Warning signs are not always posted, and salon owners sometimes give consumers inaccurate information, such as that these tans protect against sunburn. Consumers may not really read these signs, since they are exposed to so many warning labels in their lives. In some states, consumers must sign legal warnings, but it is unclear how carefully they read these warnings. Of course, one could argue that they are choosing to ignore these labels, and are therefore assuming the risk. Consumers also often underestimate the risk that

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things mentioned in the warnings are going to happen to them. These problems do not justify a ban, however, as long as government regulation encourages the release of as much information as possible to the public. A more informed choice is a more appropriate goal than is no choice at all.

The free choice argument is also limited by the fact that the choices consumers make affect society as a whole, rather than just their individual lives. When a consumer decides to visit a tanning salon, she subjects other people to risks too. If she develops skin cancer, an eye injury, or a photoallergic reaction, then society will pay for her choice through higher health care costs and longer waits in hospital emergency rooms. If she dies of malignant melanoma, then society may have to bear the cost of raising her children or caring for her aging parents. However, every choice made by individuals in our society has an effect on other people, so some further need for regulation is required.

Potential Liability

A ban of tanning salons is also unnecessary because the industry may be regulated by the possibility of future liability. Suits against tanning salons and lamp manufacturers have not yet begun, probably because these devices have only become so popular in the last few years, and the damage they cause may not appear for a long time. However, the industry may be subject to mass tort litigation in the future, as its effects become clear.⁸⁸ According to Kubasek and Giampeto-Meyer, salon users could sue under three theories:

negligence; breach of express or implied warranty, since owners often claim that their products are safe; and strict liability, since tanning devices are unreasonably dangerous products.⁸⁹ The industry will most likely assert defenses of contributory negligence and assumption of risk, but these defenses are unlikely to be successful, because consumers

⁸⁸Kubasek, *supra* note 86, at 1.

⁸⁹*Id* at 19.

⁹⁰ *Id* at 21-22.

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have not been given adequate information by the parlors about the risks of UVA lamps.⁹⁰ If this industry becomes subject to mass tort litigation, or the industry even thinks that it will be, then a ban would not be necessary. Such litigation would force the industry to pay for the injuries it causes, and would therefore encourage the industry to make its product as safe as possible, refuse to tan customers in high risk groups, and drive out of business those salons who do not adequately inform their customers of risks. Such litigation could therefore lead to self-regulation. There are several problems with this theory, such as the assumption that all possible plaintiffs will be adequately compensated for their injuries, and the issue of the damage the industry is causing before such litigation, and therefore self-regulation, begins. However, mass tort could regulate the industry without the FDA spending any resources.

Political Considerations

Warning signs are more politically popular than outright bans. Over one million people in the United States who use these 21,000 salons would be quite opposed to this decision. While indoor tanners as a group are probably diffuse and unorganized, the tanning salon lobby organization, the Suntanning Association for Education, would certainly exert great pressure against the ban. If there were a great deal of resistance against the ban, the FDA, or at least the administration, might decide that the ban was not worth the effort.

State Regulation

Another argument against a federal ban, or even further federal regulation, is that the states may be better equipped to regulate tanning salons. As discussed above, twenty states already regulate tanning salons more stringently than does the federal government. It

seems likely that the states who regulate the salons might be those with the most active indoor tanning industries, like California and Florida. This industry may also be a local concern, since most patrons probably have a local tanning parlor where they have most of their sessions. The people in each particular state may have different beliefs as to the importance of these parlors and of being tan, and therefore perhaps each state should decide how they should be regulated. On the other hand, federal regulation might be useful, since tanning beds are probably manufactured in different states than where they are used, and it would be difficult for manufacturers to comply with fifty different laws. Also, the dangers of these salons are uniform throughout the country, so a federal regulation might be useful everywhere.

B. Arguments For the **Ban**

Many arguments might also be raised in support of a ban on tanning salons. These salons cause physical injury without providing much benefit, present regulations are difficult to enforce, warning labels are not always effective ways to convey information, and a ban could stimulate innovation of safe tanning products. While these arguments raise important points, their concerns can be addressed with further regulation, rather than a ban.

Medical Effects

One argument for banning tanning parlors is that they are a danger to the public health. The radiation from tanning lamps has been linked to several illnesses, including skin cancer, eye injury, premature aging of the skin, photosensitive drug reactions, and aggravated reactions to subsequent sunlight exposure.

The most serious allegation raised against these lamps is that they cause skin cancer. Skin cancer is a serious problem in the United States today, and is likely to become more of one in the future. Approximately one million cases of skin cancer occur in this

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country each year, more cases than of every other cancer combined.⁹¹ One out of every six Americans alive today will have skin cancer at some point in their lives.⁹² Fortunately, 95% of these cases will be either basal or squamous cell carcinoma, the two most curable forms of skin cancer.⁹³ One out of ninety Americans will have malignant melanoma, the most dangerous form of skin cancer, which has a fatality rate of ten to twenty percent.⁹⁴ The rate of skin cancer is also growing rapidly, more rapidly than any other cancer in the last twenty-five years, except lung cancer in women.⁹⁵ The rate of melanoma increased 600% from 1932 to 1982, and another 83% from 1980 to 1987.[~]

Numerous studies have shown that exposure to ultraviolet radiation causes skin cancer. However, scientists disagree over which ultraviolet light has this effect. Two forms of ultraviolet light emitted by the sun penetrate the Earth's ozone layer: UVA, with wavelengths of 320 to 400 nanometers, and UVB, with wavelengths of 280 to 320 nanometers. In general, UVB rays burn the skin, while UVA rays tan the skin. Solar UVA radiation is much more plentiful than UVB radiation, and unlike UVB, its levels do not vary with season, weather, or distance from the equator. While UVB radiation is generally accepted as a cause of skin cancer, UVA radiation was thought to be relatively innocuous until ten years ago. As a result, most tanning salons switched from UVB to UVA radiation during the mid-1980s, so that most tanning beds today emit seventy parts UVA to one part UVB.⁹⁷ The carcinogenicity of tanning beds therefore depends largely on that of UVA radiation.

⁹¹Guy Murdoch, *A Consumer's Guide to Sun Protection: Sunscreen Isn't Enough*, Consumers' Res. Mag., July, 1994, at 10.

⁹² *Id.*

⁹⁴ *The Editorial Board Speaks*, Am. J. Diseases of Children, Oct., 1992, at 1137.

⁹⁵ *Id.*

⁹⁷ *UV-A Rays for Tanning Seen Unsafe*, *supra* note 3, at 54.

Recent studies have indicated that, contrary to prior knowledge, UVA radiation is a risk factor for skin cancer.⁹⁸ For example, in one study, one group of mice was exposed to UVA radiation for twelve hours a day, to stimulate daylight, while another was exposed to UVB radiation for 75 minutes a day. All of the mice in both groups developed tumors, although the UVA mice experienced fewer tumors per mouse. The authors of the study concluded that UVA was only slightly less carcinogenic than UVB, taking into account the fewer number of tumors per mouse and the difference in exposure times to the two types of light. ~ They also indicated, however, that UVA radiation is particularly dangerous for three reasons: it does not create the warning sign of sunburn, which tells tanners that they have been exposed to too much radiation; the public is more familiar with the risks of UVB, and are therefore more careful about it, and UVA does not have the beneficial effects of UVB, such as the creation of Vitamin D in the skin.¹⁰⁰

Other scientists have also indicated that UVA radiation may be even more dangerous than UVB radiation, since it does not cause sunburn. While sunburn serves as a warning sign, it also has other beneficial effects. For example, some scientists have pointed out the important role played by sunburn in protecting against skin cancer.¹⁰¹ Some cells damaged by UVB radiation die as sunburned cells through the process of apoptosis, which leads to peeling. This process eliminates some of the damaged cells, cells that could otherwise cause cancer. It seems that sunburn, despite the pain, may actually be protective

⁹⁸ See, e.g., H. van Weelden et. al., *The carcinogenic risks of modern tanning equipment: Is UV-A safer than UV-B?*, 280 Arch. Derm. Res. 300 (1988); Stephen

D. Walter et. al. *The Association of Cutaneous Malignant Melanoma with the Use of Sunbeds and Sunlamps*, 131 Am. J. Epid. 232 (1990); Preston & Stem, *supra* note 83, at 1655; Howard K. Koh, *Medical Progress: Cutaneous Melanoma (Review Article)*. 325 New Eng. J. Med. 171, 173 (1991); Stem, *Members*, *supra* note 2, at 1097.

⁹⁹ van Weelden, *supra* note 98, at 307.

¹⁰¹ Annemarie Ziegler et. al., *Sunburn and p53 in the onset of skin cancer*, Nature, Dec. 22/29, 1994, 773, at 774-775.

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- a deliberate effort by skin to forestall the tumorigenic effects of ultraviolet light.¹⁰² Another scientist has noted that UVA radiation from tanning booths produces lesions that are deeper and more harmful than those caused by sunlight.¹⁰³

Other evidence shows that even if UVA radiation is not carcinogenic by itself, it can stimulate the carcinogenic effects of UVB radiation. As a result, a tanning salon user may be particularly susceptible to cancer caused by exposure to natural sunlight after leaving the salon. UVA radiation weakens the immune system in the skin, illustrated by studies that show lower numbers of suppressor T-cells, lower mean natural killer cell activity, and decreased delayed hypersensitivity responses after exposure to UVA.¹⁰⁴ This weakened immune system allows UVB-induced tumors to grow particularly quickly, and is exceptionally dangerous for people with other immuno-deficiency disorders, like AIDS.

Epidemiological studies have also shown a link between the use of tanning salons and the development of skin cancer in humans. One study showed that the use of a sunlamp with 99% UVA radiation three times a week, for thirty minutes per session, over a twenty-year period, doubles the risk of developing squamous cell carcinoma.¹⁰⁵ Another study showed that the risk of developing melanoma increases with the use of UVA-lamps:

use of such lamps one to three times a year doubles the risk of developing melanoma, use four to ten times a year quadruples it, and use over ten times a year increases the risk over eight-fold.¹⁰⁶

Exposure to UVA radiation has many other detrimental health risks besides skin cancer, however. For example, since the light source is so close to tanners, these booths

¹⁰²Alexander Kamb, *Sun protection factor p53*, Nature, Dec. 22/29, 1994, at 730. ¹⁰³Dr. Rex Amonette, American Academy of Dermatologists, cited in *Tanning Salons & Risk*, supra note 1.

¹⁰⁴See, e.g., L.L. Larcom et. al., *Suppression of Immunocompetence and DNA Repair Capacity*, 82 J. Natl. Cancer Inst. 1361 (1990).

¹⁰⁵Walter, supra note 98, at 240-241.

¹⁰⁶See *Medlife Checkup*, Chicago Sun-Times, Apr. 3, 1994, at 51.

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are very dangerous to the eye, even more so than direct sunlight.¹⁰⁷ Closed eyelids offer no protection from this damage. These booths can cause cataracts, as well as extensive retinal damage.¹⁰⁸ Indoor tanning is also an important cause of corneal burns. Before the opening of several tanning salons in one area, only 10.5% of all corneal burns were attributed to ultraviolet radiation from home lamps or sunlight. Within one year of the opening of salons, this rate jumped to 29%. The percentage increased incrementally with the opening of each salon.¹⁰⁹ One survey of Wisconsin emergency room physicians revealed that 42% of them had treated a patient who had suffered eye injury at a tanning salon.¹ 10

Tanning at salons also induces premature aging and wrinkling of the skin. Due to its longer wavelengths, UVA radiation penetrates more deeply into the skin than does UVB, where it damages both collagen, the protein in the skin's connective tissue, and elastin, which keeps the skin firm.¹¹¹ As a result, long term exposure to UVA radiation can severely wrinkle the skin.

Indoor tanning can have particularly dramatic effects on patients who have photoallergies or who are taking photosensitive drugs, including antihistamines, tranquilizers, and oral contraceptives. Most photosensitive drugs absorb in the UVA range rather than the UVB range, so when patients on such drugs are exposed to UVA light, they can experience rashes, sunburns, severe blistering, and skin fragility.¹¹² Patients with diseases sensitive to light, such as lupus, may find such exposure life-threatening.³

¹⁰⁷*FTC Warning of Indoor Tanning Equipment*, FTC Watch. Oct. 14, 1988,

¹⁰⁸Murdoch, *supra* note 91, at 10.

¹⁰⁹Bradford L. Waters and Ted Martin Kelley, *Commercial Tanning Facilities: A*

New Source of Eye Injury, 5 Am. J. Emergency Med. 386 (1987).

I ¹⁰*Injuries Associated with Ultraviolet Tanning Devices-Wisconsin*, 125 Arch.

Derm. 887 (1989).

¹¹¹Murdoch, *supra* note 91, at 10.

¹ ¹²*See, e.g.*, P. M. Farr, *Skin fragility and blistering due to use of sunbeds*, 296

Bnt. Med. J. 1708 (1988).

¹ ¹³*See, e.g.*, Robert S. Stem, *An Exacerbation of SLE After Visiting a Tanning Salon*, 255 New Eng. J. Med. 3120 (1986).

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UVA radiation has been linked to a host of other physical effects, including pruritus, burns, dryness, and nausea. In one study, 28% of all users felt itching during or immediately after exposure, and 8% developed a rash or nausea.¹¹⁴ Users who wore goggles were less likely to experience nausea. Overall, one-third of the users in this study developed side effects, although some may have been caused by heat and humidity in the tanning booths.⁵ These booths also often cause cutaneous burns. In 1986, 2600 burn injuries in the United States were caused by sunlamps, with 700 occurring at commercial tanning facilities.¹¹⁶ In 1988, 42% of emergency room dermatologists in this country treated patients with burns caused by tanning parlors.⁷ In 1986, the Consumer Products Safety Commission estimated that tanning salons were responsible for 1,781 visits to the emergency room each year.¹¹⁸

Finally, despite the belief of many salon users, a salon tan, unlike a natural tan, does not provide protection against future sunburn. When people tan in the sun, UVB light thickens the epidermis, thereby providing protection from future damage. UVA light does not have this effect. This difference can have dramatic results: in one case, a man suffered a life-threatening second degree flash burn all over his body after sunbathing for one hour after visiting a tanning salon.⁹ Users, convinced that their salon tan provides the same protection as a natural tan, may not be sufficiently careful.

While the scientific evidence shows that UVA radiation can be detrimental to human health, these effects do not warrant a ban of such devices, for three reasons. First, the effects of UVA radiation, unlike those of UVB, have not yet been generally accepted by the scientific community. Further research is required before a ban is warranted. Second, many

¹¹⁴Diffey, *supra* note 85, at 72.

¹¹⁵*Id.* at 73.

¹¹⁶*Ultraviolet Tanning Devices-Wisconsin*, *supra* note 110, at 887.

¹¹⁷*Id.*

¹¹⁸Brand, *supra* note 62, at 76.

¹¹⁹*Id.*

of these effects can be prevented by regulations less draconian than an outright ban, such as requiring the use of protective goggles and preventing use of these devices by people taking photosensitive drugs.

Third, and most importantly, while the effects of UVA radiation are severe, they have not been proven as detrimental to the skin as those of natural sunlight. Since a ban of tanning devices might send their users out into the sun more, such a ban could actually worsen the health of these people. The effect of such a ban depends on the reasons why people go to tanning parlors. Some people go to achieve a base tan without burning. These people, who are still avid sunbathers, would probably respond to the closing of tanning salons by just obtaining their base tan in the sun. Other patrons are trying to get a quick tan before embarking on a tropical vacation, and these people would probably react in the same way. Others, however, believe that indoor tanning is safer than outdoor tanning, and some of them may have decided that outdoor tanning is not worth its risks, and would therefore forego tanning entirely if tanning parlors were closed. On the other hand, some of them might return to outdoor tanning when it is the only way to achieve their desired color. Further research into the motivations of indoor tanners is necessary to determine their reaction to a ban.

Further research into the relative dangers of natural sunlight and tanning lamps would also be helpful in this determination. While the higher percentage of UVB light in natural light probably renders it more carcinogenic, UVA light does not cause sunburn, and therefore does not tell people when they have been exposed to too much radiation. UVAdamaged cells are also not discarded through the peeling process. Also, UVA beds are more dangerous to the eyes, since the light sources are so close to the tanners. It may also be possible that people are more aware of the dangers of natural sunlight and are more careful, making it less dangerous. If natural sunlight is significantly more dangerous than tanning lamps, and closing salons would return many tanners to the sun, then a ban might not be a rational response.

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Enforcement

Another argument raised in support of a ban is that it would save enforcement costs. A total ban is cheaper to enforce than a set of regulations, since less effort is required to determine if a tanning salon is operating at all than to determine if it is posting all of its warning signs and using correct timers. A ban would presumably drive all of these establishments off of the market, thereby eliminating a whole section of FDA's costs. The **FDA could also more easily bring enforcement actions under a ban, because the agency** would only be required to show that such a device was being used at all, rather than items so detailed as what verbal claims were made to customers who used the salon. Finally, a ban would send a strong message to the public about the danger of these salons, which would probably inspire some people to quit the tanning habit.

While this argument is compelling, it is inconclusive. A ban might actually increase enforcement costs. Banning these salons would close most of them, but it would force others underground, where the FDA would have to spend a lot of money finding them. Also, a ban might make such devices more attractive to teenagers, who would therefore try to use these salons more.

The Problems with Warning Labels

Another argument for banning these devices is that posting warning labels may not be an effective way to convey information. While such labels are presumed to give the users information they need to make an informed choice, the users may actually ignore them. According to Lars Noah, warning labels are adopted as the appropriate response to risks more often than they should be, because they are easier to adopt politically than a ban,

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and because courts consider them a low cost solution to problems.¹²⁰ He argues that the proliferation of such warnings has two central drawbacks: first, it dilutes the impact of the warnings, because consumers see so many of them and are unable to decide which ones are important; and second, it may lead consumers to overreact to the warnings, not realizing how statistically remote the chances of a risk are, thereby distorting consumer choices.¹²¹ Two others have argued that a warning will only have its desired effect if it accomplishes seven steps: exposure to the consumer, attention by the consumer, comprehension by the consumer, storage and retrieval by the consumer, choice of an appropriate response by the consumer, performance of the correct action by the consumer, and adequate performance of the action by the consumer.¹²² Since the odds of each step being completed are less than 100%, the probability that all of the steps will occur may be quite low. As a result, warning labels are rarely effective.¹²³

Noah concludes that warnings are only appropriate to discourage one particular group of consumers, such as pregnant women, from using the product, or to tell consumers how to use the product in order to avoid its risks.¹²⁴ However, as he states, if the goal of risk labelling is to encourage consumers to stop purchasing a product, as opposed to encouraging them to make informed choices, the preferred solution would be to ban the product altogether rather than to formulate an overly alarming warning statement.¹²⁵ It is difficult to apply Noah's recommendation to the tanning booth warnings. On one hand, the government may be trying to discourage use of these products by everyone, making a warning statement inappropriate. On the other hand, tanning

¹²⁰Lars Noah, *The Imperative to Warn: Disentangling the Right to Know from the Need to Know about Consumer Product Hazards*, 11 Yale J. Reg. 293 (1994).

at 381.

¹²² Mark R. Lehto and James M. Miller, *The Effectiveness of Warning Labels*. 11

J. Prod. Liab. 225, 227 (1988). at 231-235.

supra note 120, at 297.

¹²⁵ *Id*

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devices might fall into Noah's categories where labelling is appropriate. The government could be trying **to** prevent certain groups in particular from using the product, such as those who do not tan in the sun and those taking photosensitive drugs. Also, the government could be trying to instruct people on how to use the devices properly, by giving recommended exposure positions and maximum exposure times, as well as suggesting the use of goggles. Labelling may therefore be precisely the correct solution to this problem.

Benefits

A further argument for banning these salons is that, despite their risks, they have no proven health benefits. While certain people feel a psychological and social benefit when they are tan, weighing this benefit against the real risks of cancer, cataracts, corneal burns, cutaneous burns, and life-threatening photosensitive reactions associated with these devices is very difficult. Some argue that a ban is the most appropriate response to this set of benefits and risks. Tanners can live without the psychological benefits associated with their habit, but the government can save real lives by eliminating these risks. A ban is particularly appropriate in this case, because the benefit is immediate, whereas the risks are long term and therefore underestimated.

While the risks and benefits of tanning salons are certainly difficult to balance, the correct response to this situation may not be a ban. While it is true that people often underestimate risk, each individual consumer knows how much benefit she receives from tanning, and how much risk she is willing to assume. As long as adequate information is made available to consumers, they should be able to decide on their own. The government should not be able **to** adopt a complete ban, saying that someone who adores tanning, always wears goggles, and is not in a high risk group for skin cancer cannot tan.

Innovation

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Another advantage of a ban is that it might encourage quicker development of ways to tan without exposure to harmful UVA radiation, such as self-tanning creams. Those customers of tanning parlors who are concerned with the dangers of natural sunlight might be new customers for this industry, since they will have no way to tan once the salons are closed. Once these creams are made more effective, people who tan in the sun may also switch to them, improving public health even more. A ban would therefore stimulate innovation that will improve public health.

On the other hand, companies have incentives to develop such products even when the tanning salons are open. If tanners are made aware of the dangers of tanning, the ones who are concerned with the risks will switch to the creams anyway. Also, many people are concerned with the other costs of tanning, such as time and discomfort, and therefore use the creams. The plethora of such creams on the market shows how their development is not limited by the existence of the tanning salons.

III. Conclusion

As a result, a ban is not the most effective way to deal with the growing use of tanning salons in the United States. While such a ban would lower enforcement costs, avoid the information overload problems with warning labels, and encourage innovation of safer tanning products, it would infringe upon the ability of the public to choose indoor tanning and would cause political problems. Most importantly, while it would prevent use of these machines, which can be quite dangerous to health, it might send many indoor tanners back out into the sun, a proposition that might be even more dangerous. Therefore, a ban on tanning salons will not be an appropriate course of action until evidence indicates that these salons are more dangerous than the sun, either because their radiation is more dangerous or because they convince people to tan who would not do so otherwise. A ban on tanning salons at this point would eliminate an alternative that may be safer than outdoor tanning.

However, while a ban is not an appropriate response to this problem, recent scientific evidence has indicated that UVA tanning beds are more dangerous than was once believed. The decision not to ban these products does not foreclose the opportunity to regulate them more strictly. The arguments raised in support of a ban make important points that can be helpful in designing future regulations. For example, all tanners should be made aware of the newfound risks of indoor tanning, so the government should ensure that such information is provided. To minimize the dangers of indoor tanning and ensure that such tanners are making an informed choice, the following regulations should be adopted, in addition to the current FDA regulatory scheme:

1. Signed warning statement - Some tanners are not making informed choices about indoor tanning, because they are receiving inadequate, and sometimes inaccurate, information about its risks and benefits. Instead of reacting to this situation by banning tanning salons, the government should try to have this information released to consumers. As discussed above, and in the articles by Noah, Lehto, and Miller, a warning sign might not be the best mechanism for conveying important information. A better solution would be to require tanners to sign a warning statement the first time they visit a salon, and every six months thereafter. This statement would be drafted by the FDA, and would list the various dangers associated with indoor tanning, including skin cancer, eye injuries, aging of the skin, photoallergies, and rashes. To ensure that tanners read each item, they should be required to initial each one. Finally, since photosensitive drugs can cause such serious reactions, the salon staff should be forced to ask the tanner if she is taking any of the applicable drugs, and initial that provision, showing that the staff asked the tanner this question. This form should be kept on file at the tanning salon, to make FDA inspection as easy as possible.

2. Safety video - Consumers should have access to the greatest amount of information possible about indoor tanning. Therefore, a video should be provided at each salon describing the dangers of indoor tanning and how to minimize the risks of danger.

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This video can be created by the FDA, or by the trade association, the Suntanning Association for Education, and approved by the FDA. The staff of the tanning salon should offer a viewing of this video to new customers of the salon before they tan for the first time. Another option would be to require each customer of the salon to view the video each year, and have both the customer and a member of the staff sign an affidavit that such viewing occurred. The availability of such a video would not only provide more information to customers than can reasonably be presented in a warning sign; by being created or approved by the FDA, it shows that the government thinks that safety around these devices is important, which might make tanners more careful.

3. Additional posted warnings - While posted warnings may not always be effective, three items, in addition to those already required, should be posted on or near the tanning device, so that they can reasonably be seen immediately before exposure:

- To emphasize the dangers of tanning for certain groups, a sign that states:

This machine should not be used by people taking tranquilizers, antihistamines, or oral contraceptives, as well as people who do not tan well in the sun.

- To indicate proper exposure times for different customers, a chart that shows and describes different skin types, and provides maximum exposure times for each.

- Since the amount of radiation varies so much with lamp age, the irradiance levels in each spectrum should be measured and posted weekly.

While providing extra information might backfire, since it might cause customers to ignore all of the warnings, some users might profit from this additional information. Also, because these items are all concise, they communicate their message clearly and are unlikely to confuse many consumers.

4. Required eyewear - While one goal of the government is to provide information to consumers, in some cases, the dangers are so great that the government should proscribe certain behavior. For example, the dangers of eye injury from these

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devices is so great and so underestimated that all tanners should be required to wear appropriate eyewear when tanning.

5. Nonresettable timers - In addition, efforts should be made to reduce the **practice of overexposure in tanning salons. As a result, devices should be made with timers** that cannot be reset by the consumers. A requirement that a user consult with the staff **before resetting the timer will probably convince some people to tan for a shorter period of** time, while emphasizing that tanning for twice the recommended time is a serious choice, rather than salon practice.

6. Parental permission - Finally, skin cancer education efforts have been unsuccessful in reaching teenagers. While most people receive fifty percent of their total sun exposure by the time they are eighteen,¹²⁶ and eighty percent by the time they are twenty-one,¹²⁷ teenagers, unlike adults, have not yet reduced their time in the sun in response to new information about skin cancer.¹²⁸ While the behavior of young people in large part determines whether they will have skin cancer when they are older, teenagers have not been careful about their sun exposure. As a result, tanners under eighteen years of age should be required to obtain parental permission before using the salons. Discussing this choice with a parent might lead to a more informed choice about whether or not to use the salons. While this regulation surely infringes upon the free choice of teenagers, it does not absolutely deny the use of tanning salons for them. They need only to take one extra step.

These new regulations will certainly cost some extra money, and therefore eat up more of FDA's scarce resources. However, the cost would really only be incremental, because an inspector would already be at the salon and would only have to check a few

¹²⁶Cherniack, *supra* note 2, at 897.

¹²⁷Banks, *supra* note 4, at 30.

¹²⁸Jane Turnis, *Pale is Beautiful: Even in Hollywood. the Bronzed Look Has Lost*

its Glow, **The Buffalo News**, July 5, 1994, at 3.

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extra things. While there is certainly no guarantee that these regulations will be enforced any better than the current ones are, their enforcement would probably not cost much extra money. These regulations are certainly worth whatever extra expense they might cause. New scientific evidence is discovered all of the time concerning the risks of UVA radiation, and consumers who frequent these parlors should be given this information. The government should adopt these regulations **to** assist consumers in making informed choices about their own bodies, while adopting other regulations that minimize risks in these salons. While a ban of these salons is not yet warranted, given the present state of scientific knowledge, the adoption of these standards would go a long way toward ensuring that tanners are making informed choices and tanning as safely as possible.

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